

PROCEEDINGS OF THE
ROYAL ENTOMOLOGICAL SOCIETY
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ORDINARY MEETING

WEDNESDAY, 4th MAY, 1955, at 5.30 p.m.

AGENDA

1. Confirmation of the Proceedings of the Ordinary Meeting held on 6th April, 1955.
2. Recommendations of candidates for Fellowship. First reading.
3. Recommendations of candidates for Fellowship. Second reading.
4. Announcement of election of new Fellows.
5. Additions to the Library. [See p. 14].
6. Admission of Fellows.
7. Exhibits.

Fellows are particularly requested to bring suitable exhibits to the Meeting even though it may not be possible to announce their intention to do so beforehand.

Note.—To avoid congestion in the Library and to enable exhibits to be displayed to greater advantage, a table has been placed in the meeting-room for this purpose. Fellows are asked to place their exhibits on this table with a suitable explanatory note, as soon as possible on the afternoon of the meeting, so that they are available for inspection there before the meeting opens.

8. Communications.

1. Mr. M. W. R. de Vere Graham.

Some features of general interest in Chelonine Braconidae.

[ABSTRACT.]

A comparative study of the integumentary sculpture in Cheloninae and in other insects indicates that such sculpture is divisible into two main types, microsculpture and macrosculpture, which have independent origins. These types are sometimes confused in descriptive work but it is important from a morphological point of view to distinguish them by special terms.

The gaster in Cheloninae is highly modified by fusion of the middle portions of its anterior tergites to form a carapace, while a progressive differentiation of the lateral portions of some of these tergites to form free spiracle-bearing plates occurs. In males of some species the apex of the carapace bears a problematic structure termed the fissure, which assumes various shapes. These structures are useful in classification.

The little work done on the biology of Cheloninae shows that they oviposit in the eggs of Lepidoptera. The variable length and shape of the ovipositor, a particular form of which is sometimes characteristic of species-groups (e.g., in *Chelonus*), suggests a diversity of oviposition-habit which should be an interesting study for those wishing to breed these parasites.

2. Dr. K. Mellanby, C.B.E.

Man's Sensitivity to Insects.

[ABSTRACT.]

Insect bites cause various reactions in man, in particular an "immediate reaction" and a "delayed reaction"; these two reactions are caused by different antigens. Sensitivity is commonly developed to non-biting insects, e.g. those infesting stored food products. This sensitivity seems similar to the sensitivity to bites. In both cases antigens may be prepared from the insects' bodies, their excreta or haemolymph, and not just from the saliva. Hypersensitivity to bee stings is due to an antigen, and not to the pain-producing venom, for extracts from drones give a reaction similar to that caused by a sting.

TEA will be served in the Library before the meeting.

PROCEEDINGS OF THE ORDINARY MEETING HELD ON 6th APRIL, 1955.

Dr. W. J. HALL, C.M.G., M.C., President, in the Chair.

Present : 82 Fellows and 12 Visitors.

The President extended a welcome to Dr. A. J. Nicholson, Chief Entomologist, Commonwealth Scientific and Industrial Research Organisation, Australia, and Dr. Alan Stone, of the U.S. National Museum, Washington.

The minutes of the Ordinary Meeting held on 2nd March were confirmed and signed by the President.

The names of the following candidates for election were read for the first time : Mr. Harry Britten, M.M. ; Mr. Hubert Dick Brown ; Dr. Earnest Howard Colhoun ; Mr. Louis Gurr, M.Sc. ; Mr. Abdul Aziz Khan, M.Sc. ; Mr. Alan Wilfrid Lane ; Dr. Bruce McMillan, M.B., B.S. ; Mr. Eric George Philp ; Mr. Brian Seed ; Mr. Geoffrey Vernon Philip Sewell ; Mrs. Fiona Francisca Sprague.

For the second time (taken as read) : Mr. Howard Leslie Glendower Boyce ; Mr. Roderick Campbell Fisher ; Mr. Charles Fitzroy Griffith, B.Sc., A.R.I.C., F.R.M.S. ; Mr. Graham Charles Douglas Griffiths ; Mr. Derek Baillie Janson ; Mr. B. P. Mehra, M.Sc. ; Miss Ivy Bernice Baker Mell, B.Sc. ; Mr. Talib Ali Omardeen ; Mr. Arthur Poo Nyo, B.Sc., M.Sc.

The Secretary read the names of the following newly elected Fellows of the Society : Mr. Russell Badham, 12, St. Patrick's Avenue, Parktown, Johannesburg, South Africa ; Prof. George E. Ball, Department of Entomology, University of Alberta, Edmonton, Alberta, Canada ; Mr. Alexander Claude Brown, Natal University, Pietermaritzburg, Natal, S. Africa ; Mr. Derek Bryce, The Bungalow,

Cliffe, Gt. Harwood, Blackburn, Lancs. ; Mr. William E. Collinson, 20, Pye Nest Drive, Halifax, Yorks ; Mr. Dale Latham Jackson, 9, Bromley Road, Hartburn Avenue, Stockton-on-Tees, Co. Durham ; Mr. George Arthur Turner Jeffs, Nuns Holm, 20, Scarthoe Road, Grimsby, Lincs. ; Mr. Alan Pringle, 15, Stannington Avenue, Newcastle-upon-Tyne, 6 ; Professor V. Tirumala Rao, Agricultural College, Bapatla (Guntur district), South India ; Mr. Arthur Lewis Reid, Plant Protection Division, Dept. of Agriculture, Hope, Kingston, Jamaica, B.W.I. ; Mr. David Mason Robinson, Holly House, Croston Road, Farington, Nr. Preston, Lancs. ; Mr. Tudor C. E. Thomas, Medical Department, Freetown, Sierra Leone ; Mr. Richard Arthur Tribbeck, Connaught Hall, Wessex Lane, Swaythling, Southampton.

Thanks were voted to donors of gifts to the Library since the last meeting.

Mr. B. Goater, Mr. K. C. Side and Mr. G. E. Woodroffe signed the Obligation Book and were admitted Fellows of the Society.

Mr. P. F. Mattingly exhibited some photographs of X-ray induced mutations in *Culex molestus* Forskål. He said that these were the first artificially induced mutations known to have been produced in mosquitoes. A full description of them was in the press (Laven, *Naturwissenschaften*). It was intended to use them as marker genes in studies on cytoplasmic inheritance, a good example of which appeared to have been provided by *Culex molestus*. One mutation, a sex-linked recessive, caused fusion of the tips of vein 3 and the upper branch of vein 4 with the appearance of a fork cell growing in from the wing tip. The others were autosomal and affected wing venation or caused reduction of the male palps or antenna. Even when the antenna was reduced to half its normal length mating was not affected. This might perhaps be correlated with the ability of *C. molestus* to mate in very confined spaces. Other mutations had also been obtained but their genetics had not yet been worked out.

Dr. H. E. Hinton gave a paper on sound-producing organs in the Lepidoptera, an abstract of which appeared on pages 5-6.

A discussion followed in which Mr. P. T. Haskell, Dr. A. J. Nicholson (a visitor), Miss C. Longfield, Mr. E. C. Zimmerman, Professor P. A. Buxton, Professor G. C. Varley, Mr. C. N. Hawkins and Mr. E. B. Britton took part.

Mr. Haskell said that he had found by experiment that in moths response to sound began at 8000 cycles per second. Moths of the genus *Phalera* react to the squeak of a glass bottle stopper 24 feet away, but the tympanal organ showed evidence of rapid fatigue. Moths can only receive sounds of high frequency and of very short duration.

Dr. Nicholson referred to the very high-pitched intermittent rustling sound produced by the Whistling Moth (*Hecatesia spp.*) in Australia. He said that he had been fortunate enough to observe the moths in flight while they were emitting the sound. The species observed produced sounds for a very short period soon after sunset. The moths were hovering but they lost height rapidly each time the sound was produced. The wings met over the back of the moth and this was shown by the loss of scales from the knob on each fore wing. Below the knob is a membrane and it seems possible that the raising of the wings above the back puts strain on the membrane, which becomes concave, and the blow received when the knobs meet might cause the concavity to snap over into a convexity, producing a click, which, rapidly repeated, constitutes the sound heard.

Professor Buxton suggested that the earliest Lepidoptera preceded the bats, and, if so, this would rule out the theory that the sensitivity of moths to high-

pitched sounds was evolved as a protection from bats. Dr. Hinton replied that bats were a very old group, and he believed that the evolution of tympana did not precede the appearance of bats.

Mr. Zimmerman pointed out that moths which showed evidence of having been isolated for a long period in the Hawaiian Islands, where there were no native species of bats, showed no signs of reduction of tympana, which seemed to indicate that the sense of hearing was not developed as a defence against bats.

Mr. Dennis Leston and **Mr. P. T. Haskell** gave a paper on sound production in terrestrial Hemiptera-Heteroptera, an abstract of which appeared on page 6. The talk was illustrated by tape recordings of the sounds made by various species of Hemiptera.

E. B. BRITTON, *Honorary Secretary*.

The next meeting will be held on 1st June at 5.30 p.m.

ADDITIONS TO THE LIBRARY.

Presented.

[Bei-Bienko, G. A. *Orthoptera. Grasshoppers, subfam. Phaneropterinae*. 8vo. Moscow and Leningrad. 1954. *Fauna of U.S.S.R.* (N.S.) 59. [Academy of Sciences of U.S.S.R. By exchange.]

Clarke, J. F. Gates. *Catalogue of the type specimens of Microlepidoptera in the British Museum (Natural History) described by Edward Meyrick*. Large 8vo. London. 1955. [Trustees of the British Museum.]

Hincks, W. D. *A systematic monograph of the Dermaptera of the world. Based on material in the British Museum (Natural History)*. Part 1, Pygidicranidae subfamily Diplatyinae. Large 8vo. London. 1955. [Trustees of the British Museum.]

In addition, separates have been presented by Dr. Patrick Roche; Dr. J. L. Cloudsley-Thompson; Dr. Max Sellnick; Miss Theresa Clay; Mr. K. G. V. Smith; Dr. D. S. MacLagan; Smithsonian Institution; Departamento de Plagas y Enfermedades, Venezuela; United States Department of Agriculture; Nature Conservancy; Mr. A. E. Gardner; Anti-Locust Research Centre; Mr. W. O. Steel; and Commander G. W. Harper, R.N. (Retd.).